

PERIMETER-COOLED TURBINE BUCKET AIRFOIL
COOLING HOLE LOCATION, STYLE AND CONFIGURATION

ABSTRACT OF THE DISCLOSURE

A turbine stage one bucket has an airfoil having a plurality of cooling holes passing through the airfoil from 0% span to 100% span whereby cooling air exits the airfoil tip into the hot gas path. X and Y coordinate values are given in Table I, locating the holes relative to the airfoil profile at airfoil profile sections of 5%, 50% and 90% span, Table I also giving the hole diameters. In this manner, cooling hole optimization for this turbine bucket airfoil is achieved. The cooling holes are also located in relation to the profile of the bucket airfoil given by the X, Y and Z coordinate values of Table II, the two coordinate systems having the same origin.